

=====

Sequence Listing could not be accepted due to errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Durreshwar Anjum

Timestamp: [year=2008; month=12; day=22; hr=12; min=50; sec=12; ms=831;]

=====

Reviewer Comments:

<220>

<221> DOMAIN

<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 137

Tyr	Phe	Cs	Ala	Ser	Ser	Arg	Asp	Gly	Val	Ser	Tyr	Glu	Gln	Tyr
1				5					10					15
Phe	Gly	Pro	Gly											

Invalid amino acid designator at location (3), Please make necessary changes.

Application No: 10612468 Version No: 5.0

Input Set:

Output Set:

Started: 2008-12-09 11:51:59.401
 Finished: 2008-12-09 11:52:03.076
 Elapsed: 0 hr(s) 0 min(s) 3 sec(s) 675 ms
 Total Warnings: 116
 Total Errors: 55
 No. of SeqIDs Defined: 168
 Actual SeqID Count: 168

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (1)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (1)
W 213	Artificial or Unknown found in <213> in SEQ ID (2)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (2)
W 213	Artificial or Unknown found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 213	Artificial or Unknown found in <213> in SEQ ID (12)
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)
W 213	Artificial or Unknown found in <213> in SEQ ID (18)
W 213	Artificial or Unknown found in <213> in SEQ ID (19)
W 213	Artificial or Unknown found in <213> in SEQ ID (20)
W 213	Artificial or Unknown found in <213> in SEQ ID (21)
W 213	Artificial or Unknown found in <213> in SEQ ID (22)

Input Set:

Output Set:

Started: 2008-12-09 11:51:59.401
Finished: 2008-12-09 11:52:03.076
Elapsed: 0 hr(s) 0 min(s) 3 sec(s) 675 ms
Total Warnings: 116
Total Errors: 55
No. of SeqIDs Defined: 168
Actual SeqID Count: 168

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (23)
W 213	Artificial or Unknown found in <213> in SEQ ID (24)
W 213	Artificial or Unknown found in <213> in SEQ ID (25) This error has occurred more than 20 times, will not be displayed
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (76)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (78)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (80)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (82)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (84)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (86)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (88)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (90)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (92)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (94)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (96)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (98)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (100)

Input Set:

Output Set:

Started: 2008-12-09 11:51:59.401
Finished: 2008-12-09 11:52:03.076
Elapsed: 0 hr(s) 0 min(s) 3 sec(s) 675 ms
Total Warnings: 116
Total Errors: 55
No. of SeqIDs Defined: 168
Actual SeqID Count: 168

Error code	Error Description
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (102)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (104)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (106)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (108)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (110) This error has occurred more than 20 times, will not be displayed
E 323	Invalid/missing amino acid numbering SEQID (137) POS (4)
E 323	Invalid/missing amino acid numbering SEQID (137)at Protein (5)
E 323	Invalid/missing amino acid numbering SEQID (137) POS (9)
E 323	Invalid/missing amino acid numbering SEQID (137)at Protein (10)
E 323	Invalid/missing amino acid numbering SEQID (137) POS (14)
E 331	Count of Protein differs from the <211> tag Input: 19

SEQUENCE LISTING

<110> Zhang, Jingwu Z.
Ho, Walter Kowk Keung
Zhang, Dongqing
Sun, Wei

<120> T Cell Receptor CDR3 Sequence and Methods for
Detecting and Treating Rheumatoid Arthritis

<130> D6622

<140> 10612468
<141> 2003-07-02

<160> 168

<210> 1
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> part of the complementary determining region-3 (CDR3)
in the V(16 family (BV16 gene) of T cell receptors
(TCR) in patients with rheumatoid arthritis (RA)

<400> 1
agccaagctg acgggaccca t 21

<210> 2
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<223> part of the complementary determining region-3
(CDR3) in the V(14 family (BV14 gene) of TCR in
patients with RA

<400> 2
agttccgggg gcagtctgtt c 21

<210> 3
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<221> PEPTIDE
<223> conserved amino acid sequence derived from CDR3 of
TCR beta-chain BV16 in patients with RA

<400> 3

Ser Gln Ala Asp Gly Thr His

1 5

<210> 4

<211> 7

<212> PRT

<213> Homo sapiens

<220>

<221> PEPTIDE

<223> conserved amino acid sequence derived from CDR3 of
TCR beta-chain BV14 in patients with RA

<400> 4

Ser Ser Gly Gly Ser Leu Phe

1 5

<210> 5

<211> 4

<212> PRT

<213> Homo sapiens

<220>

<221> PEPTIDE

<223> amino acid sequence motif derived from CDR3 of TCR
beta-chain BV16 in patients with RA

<400> 5

Ser Trp Gly Gly

1

<210> 6

<211> 113

<212> PRT

<213> Homo sapiens

<220>

<221> DOMAIN

<223> amino acid sequence of human (beta-chain variable
region V(14 of T cell receptors

<400> 6

Met Gly Pro Gln Leu Leu Gly Tyr Val Val Leu Cys Leu Leu Gly

1 5 10 15

Ala Gly Pro Leu Glu Ala Gln Val Thr Gln Asn Pro Arg Tyr Leu

20 25 30

Ile Thr Val Thr Gly Lys Lys Leu Thr Val Thr Cys Ser Gln Asn

35 40 45

Met Asn His Glu Tyr Met Ser Trp Tyr Arg Gln Asp Pro Gly Leu

50 55 60

Gly Leu Arg Gln Ile Tyr Tyr Ser Met Asn Val Glu Val Thr Asp

65 70 75

Lys Gly Asp Val Pro Glu Gly Tyr Lys Val Ser Arg Lys Glu Lys

80 85 90

Arg Asn Phe Pro Leu Ile Leu Glu Ser Pro Ser Pro Asn Gln Thr

95 100 105

Ser Leu Tyr Phe Cys Ala Ser Ser

<210> 7
 <211> 96
 <212> PRT
 <213> Homo sapiens

<220>
 <221> DOMAIN
 <223> amino acid sequence of human (beta-chain variable
 region V(16 of T cell receptors

<400> 7
 Ile Glu Ala Gly Val Thr Gln Phe Pro Ser His Ser Val Ile Glu
 1 5 10 15
 Lys Gly Gln Thr Val Thr Leu Arg Cys Asp Pro Ile Ser Gly His
 20 25 30
 Asp Asn Leu Tyr Trp Tyr Arg Arg Val Met Gly Lys Glu Ile Lys
 35 40 45
 Phe Leu Leu His Phe Val Lys Glu Ser Lys Gln Asp Glu Ser Gly
 50 55 60
 Met Pro Asn Asn Arg Phe Leu Ala Glu Arg Thr Gly Gly Thr Tyr
 65 70 75
 Ser Thr Leu Lys Val Gln Pro Ala Glu Leu Glu Asp Ser Gly Val
 80 85 90
 Tyr Phe Cys Ala Ser Ser
 95

<210> 8
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer specific for TCR BV1 used in real-time
 PCR analysis

<400> 8
 aagcacctga tcacagcaac t 21

<210> 9
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> reverse primer specific for TCR BV1 used in real-time
 PCR analysis

<400> 9
 tagttcagag tgcaagtcag g 21

<210> 10
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>

<223> forward primer specific for TCR BV2 used in real-time
PCR analysis

<400> 10
ggttatctgt aagagtggaa cct 23

<210> 11
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> reverse primer specific for TCR BV2 used in real-time
PCR analysis

<400> 11
aggatgggca ctggtcactg t 21

<210> 12
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> forward primer specific for TCR BV3 used in real-time
PCR analysis

<400> 12
tcgagatatc tagtcaaaag gacg 24

<210> 13
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> reverse primer specific for TCR BV3 used in real-time
PCR analysis

<400> 13
ggtgctggcg gactccagaa t 21

<210> 14
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> forward primer specific for TCR BV4 used in real-time
PCR analysis

<400> 14
aagcagggat atctgtcaac gt 22

<210> 15
<211> 21

<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer specific for TCR BV4 used in real-time
PCR analysis

<400> 15
ttcagggtc atgttgctca c 21

<210> 16
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer specific for TCR BV5 used in real-time
PCR analysis

<400> 16
gatcaaaacg agaggacagc a 21

<210> 17
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer specific for TCR BV5 used in real-time
PCR analysis

<400> 17
agcaccaagg cgctcacatt ca 22

<210> 18
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer specific for TCR BV6 used in real-time
PCR analysis

<400> 18
ctcaggtgtg atccaatttc a 21

<210> 19
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer specific for TCR BV6 used in real-time
PCR analysis

<400> 19
 cccccgctct gtgcgtgga t 21

<210> 20
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer specific for TCR BV7 used in real-time
 PCR analysis

<400> 20
 catgggaatg acaaataaga agtct 25

<210> 21
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> reverse primer specific for TCR BV7 used in real-time
 PCR analysis

<400> 21
 tggctgcagg gcgtgtaggt g 21

<210> 22
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer specific for TCR BV8 used in real-time
 PCR analysis

<400> 22
 ccccgccatg aggtgacaga g 21

<210> 23
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> reverse primer specific for TCR BV8 used in real-time
 PCR analysis

<400> 23
 gagtccctgg gttctgaggg c 21

<210> 24
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>

<223> forward primer specific for TCR BV9 used in real-time
PCR analysis

<400> 24
ccaaaatacc tggtcacaca g 21

<210> 25
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> reverse primer specific for TCR BV9 used in real-time
PCR analysis

<400> 25
ccaggaatt gatgtgaaga tt 22

<210> 26
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> forward primer specific for TCR BV10 used in real-time
PCR analysis

<400> 26
acctagactt ctggtcaaag ca 22

<210> 27
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> reverse primer specific for TCR BV10 used in real-time
PCR analysis

<400> 27
ggactggatc tccaaggtac a 21

<210> 28
<211> 23
<212> DNA
<213> Artificial Sequence

<220>

<223> forward primer specific for TCR BV11 used in real-time
PCR analysis

<400> 28
ttataggac aggaagaag atc 23

<210> 29
<211> 21

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> reverse primer specific for TCR BV11 used in real-time
 PCR analysis

 <400> 29
 atgtgagggc ctggcagact c 21

 <210> 30
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> forward primer specific for TCR BV12 used in real-time
 PCR analysis

 <400> 30
 caagacacaa gatcacagag aca 23

 <210> 31
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> reverse primer specific for TCR BV12 used in real-time
 PCR analysis

 <400> 31
 ggcagcagac tccagagtga g 21

 <210> 32
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> forward primer specific for TCR BV13 used in real-time
 PCR analysis

 <400> 32
 tgaagacagg acagagcatg aca 23

 <210> 33
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> reverse primer specific for TCR BV13 used in real-time
 PCR analysis

 <400> 33
 cacagatgtc tgggagggag c 21

<210> 34
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> forward primer specific for TCR BV14 used in real-time
 PCR analysis

 <400> 34
 acccaagata cctcatcaca gtg 23

 <210> 35
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> reverse primer specific for TCR BV14 used in real-time
 PCR analysis

 <400> 35
 agaggtctgg ttggggctgg g 21

 <210> 36
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> forward primer specific for TCR BV15 used in real-time
 PCR analysis

 <400> 36
 tcacaaagac aggaaagagg att 23

 <210> 37
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> reverse primer specific for TCR BV15 used in real-time
 PCR analysis

 <400> 37
 ggggatggca gactctaggg a 21

 <210> 38
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> forward primer specific for TCR BV16 used in real-time
 PCR analysis

<400> 38
 gttccccagc cacagcgtaa ta 22

<210> 39
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> reverse primer specific for TCR BV16 used in real-time
 PCR analysis

<400> 39
 cagttctgca ggctgcacct t 21

<210> 40
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer specific for TCR BV17 used in real-time
 PCR analysis

<400> 40
 gtccccaag tacctgttca ga 22

<210> 41
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> reverse primer specific for TCR BV17 used in real-time
 PCR analysis

<400> 41
 agctgtcggg ttcttttggg c 21

<210> 42
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer specific for TCR BV18 used in real-time
 PCR analysis

<400> 42
 agacacctgg tcaggaggag g 21

<210> 43
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
<223> reverse primer specific for TCR BV18 used in real-time
PCR analysis

<400> 43
tgccgaatct cctcgacta c 21

<210> 44
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer specific for TCR BV19 used in real-time
PCR analysis

<400> 44
ccaggacatt tgggtcaaagg aaaa 24

<210> 45
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer specific for TCR BV19 used in real-time
PCR analysis

<400> 45
cagtgccgtg tctcccgtt c 21

<210> 46
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer specific for TCR BV20 used in real-time
PCR analysis

<400> 46
gaccctggtg cagcctgtg 19

<210> 47
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer specific for TCR BV20 used in real-time
PCR analysis

<400> 47
gaggaggagc ttcttagaac t 21

<210> 48
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> forward primer specific for TCR BV21 used in real-time
 PCR analysis

 <400> 48
 cccagatata agattacaga gaaa 24

 <210> 49
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> reverse primer specific for TCR BV21 used in real-time
 PCR analysis

 <400> 49
 ctggatcttg agagtggagt c 21

 <210> 50
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> forward primer specific for TCR BV22 used in real-time
 PCR analysis

 <400> 50
 cacagatggg acaggaagtg atc 23

 <210> 51
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> reverse primer specific for TCR BV22 used in real-time
 PCR analysis

 <400> 51
 gtcctccagc tttgtggacc g 21

 <210> 52
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> forward primer specific for TCR BV23 used in real-time
 PCR analysis

<400> 52
 aagagggaaa cagccactct g 21

<210> 53
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> reverse primer specific for TCR BV23 used in real-time PCR analysis

<400> 53
 cagctccaag gagctcatgt t 21

<210> 54
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer specific for TCR BV24 used in real-time PCR analysis

<400> 54
 ccaagatacc aggttaccga gttt 24

<210> 55
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> reverse primer specific for TCR BV24 used in real-time PCR analysis

<400> 55
 caggcctggg gagcgatgt c 21

<210> 56
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> forward primer specific for TCR BV25 used in real-time PCR analysis

<400> 56
 aaaacatctt gtcagagggg aa 22

<210> 57
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>

<223> reverse primer specific for TCR BV25 used in real-time
PCR analysis

<400> 57
tgaatcctca agcttcgtag c 21

<210> 58
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer specific for TCR BC used in real-time PCR
analysis

<400> 58
cagcgccctt gtgttgatg 19

<210> 59
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer specific for TCR BC used in real-time PCR
analysis

<400> 59
aagcgctggc aaaagaagaa 20

<210> 60
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> BC primer used for run-off reactions

<400> 60
cgacctcggg tgggaaca 18

<210> 61
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> FAM (expand)-labeled BC primer used for run-off reactions

<400> 61
cacagcgacc tcgggtggg 19

<210> 62
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 62

actgtgagtc tggcgccttg t 21

<210> 63

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 63

acaacgggta acttggtccc cgaa 24

<210> 64

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 64

ggtcctctac aacagtgagc caac 24

<210> 65

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 65

aagagagaga gctgggttcc actg 24

<210> 66

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 66

ggagagtcga gttccatca 19

<210> 67

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 67

tgtcacagtg agcctgggtcc catt 24

<210> 68

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 68

cctggcccga agaactgctc a 21

<210> 69

<211> 24

<212> DNA

<213> Artificial